

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1.-24. (cancelled).

25. (new) A method of identifying a compound that modifies activity of an active potassium channel protein comprising:

a) providing a cell expressing a potassium channel protein, said potassium channel protein being encoded by a first polynucleotide molecule comprising nucleotides 6 through 3257 of SEQ ID NO:1 or a second polynucleotide molecule that is degenerate with respect to said first polynucleotide molecule,

b) activating said potassium channel protein,

c) treating said cell with a test compound, and

d) detecting a change in activity of said potassium channel protein, thereby identifying a compound that modifies activity of an active potassium channel protein.

26. (new) A method of identifying a compound that modifies activity of an active potassium channel protein comprising:

a) providing a cell expressing a potassium channel protein, said potassium channel protein being encoded by a polynucleotide molecule, the complement of which hybridizes to nucleotides 6 through 3257 of SEQ ID NO:1 under stringent conditions,

b) activating said potassium channel protein,

c) treating said cell with a test compound, and

d) detecting a change in activity of said potassium channel protein, thereby identifying a compound that modifies activity of an active potassium channel protein.

27. (new) The method of identifying a compound that modifies activity of an active potassium channel protein according to claim 25, wherein said potassium channel protein being encoded by a polynucleotide molecule is encoded by nucleotides 6 through 3257 of SEQ ID NO:1.

28. (new) The method of identifying a compound that modifies activity of an active potassium channel protein according to claim 25 or 26, wherein said test compound is a member selected from the group consisting of a peptide, a chemical compound, a culture supernatant of a microorganism, a component of a plant, and a component of a marine organism.

29. (new) The method of identifying a compound that modifies activity of an active potassium channel protein according to claim 25 or 26, wherein the step of activating said potassium channel protein comprises depolarizing said cell by a whole-cell voltage-clamp technique.

30. (new) The method of identifying a compound that modifies activity of an active potassium channel protein according to claim 25 or 26, wherein the step of activating said potassium channel protein comprises depolarizing said cell by culturing said cell in a potassium solution.

31. (new) The method of identifying a compound that modifies activity of an active potassium channel protein according to claim 25 or 26, wherein the step of detecting a change in activity of said potassium channel protein comprises measuring a change in outward current of said cell.

32. (new) The method of identifying a compound that modifies activity of an active potassium channel protein according to claim 25 or 26, wherein the step of detecting a change in activity of said potassium channel protein comprises measuring a change in ion release from said cell.

33. (new) The method of identifying a compound that modifies activity of an active potassium channel protein according to claim 25 or 26, wherein the step of detecting a change in activity of said potassium channel protein comprises measuring a change in membrane potential of said cell.

34. (new) The method of identifying a compound that modifies activity of an active potassium channel protein according to claim 25 or 26, wherein the step of detecting a change in activity of said potassium channel protein comprises measuring a change in intracellular potassium levels of said cell.